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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,722	08/15/2001	Benjamin B. Dingel	064951/0156	1690

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FOLEY AND LARDNER  
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EXAMINER

DUVERNE, JEAN F

ART UNIT PAPER NUMBER

2839

DATE MAILED: 09/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/930,722

Applicant(s)

DINGEL ET AL.

Examiner

Jean F. Duverne

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 February 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 27-34 is/are allowed.
- 6) ☐ Claim(s) 1,13-18 and 20-24 is/are rejected.
- 7) ☐ Claim(s) 2-12,19,25 and 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 15-16, 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al (US patent 4,575,179).

Lee's device discloses an optical device to receive an input optical signal at 38 having one or more wavelength, the device the device comprising a beam distribution (40) element to receive the input optical signal and distribution into a plurality of beams (see fig. 1); a variable path length element to receive a plurality of beams with waves at 39 from the beam distribution element wherein the variable path element comprising a plurality of path sections, a beam interaction element at 36 to receive a plurality of beams, a variable length element, wherein the plurality of beams interact in the beam interaction element; the optical element device comprising a plurality of exit port to receive the interacted beams from the interaction element and provide an output at 54, the light on a three dimensional path length (see fig. 1).

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-14, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Lee et al (US patent 4,575,179

Lee's device discloses the aforementioned limitations but fails to disclose the shape or type of the optical element, the waveguide and the coupling structure. It would have been obvious matter of design choice to have the optical element with the star coupler, the waveguide being planar, and the coupling structure being monolithic, since modifications would have involved a mere change in shape of components. A change in shape generally recognized as being within the level of ordinary skill in the art. In re Dailey, 149 USPQ 47 (CCPA 1976). It would have been obvious to one having ordinary skill in art at the time was made to have the optical element, the waveguide and the coupling structure with different shapes or types to meet the system design and requirement in Lee's device.

3. Claims 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Lee et al (US patent 4,575,179) in view of Daneman et al (US006330102B1).

Lee's device discloses the aforementioned limitations except for the switching element controlling the intensity of light beam, and the two dimensional arrays MEMS

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mirrors facing each other. Daneman's device discloses the switching elements with the rotating mirror (see abstract) capable of controlling the intensity of the light beam. It would have been obvious to having ordinary skill in the art at the time the invention was made to use the rotating mirror and the and the two dimensional MEMS mirrors such as the one discloses in Daneman's device for controlling the light path in Lee's device.

### ***Conclusion***

4. Claims 2-12, 19, 25-26 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Prior art fails to combination features the use of the bubble-based switch to increase the length of the optical beam path with the rest of the claims limitations.

5. Claims 27-34 are allowed (see the above paragraph).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean F. Duverne whose telephone number is (703) 305-0297. The examiner can normally be reached on 9:30-8:00, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on (703) 308-2710. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.


Any inquiry of a general nature or relating to the status of this application or

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proceeding should be directed to the receptionist whose telephone number is  
(703) 308-0956.

JFD

9/3/2002



Jean F. Duverne  
Primary Examiner  
Art Unit 2839